Inorganic Data Review Narrative

Case#: 41716	**Site: Cornell Dubilier**	**Soil: 0**
SDG#: MB9H34	**Lab: Sentinel Inc.**	**Water: 19**
Sampling Team:	**Reviewer: Israel Okwuonu**	**Other: 0**

A.2.1 Data Validation Flags:

The following flags may have been applied in red by the data validator and must be considered by the data user.

J - This flag indicates the result qualified as estimated

R and Red-Line - A red-line drawn through a sample result indicates unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

U - This data validation qualifier is applied to sample results ≥ MDL when associated blank is contaminated

Fully Usable Data - The results that do not carry "J" or "red-line" are fully usable.

A.2.2 Laboratory Qualifiers:

The CLP laboratory applies a contractual qualifier on all Form I=S and the QC Form when a QC analysis is outside the control limits. These qualifiers are not applied on the Lotus or XLS spreadsheets. These qualifiers and their meanings are as follows:

N: This qualifier indicates the lack of accuracy in the reported result, and is applied when matrix spiked sample recovery is outside the control limits.

E: This qualifier indicates the presence of interference, and is applied when the ICP serial dilution is outside the control limits.

***: This qualifier indicates the lack of precision, and is applied on Form I=S and Form VI when the Lab Duplicate analysis is outside the control limits.**

U: This is a concentration qualifier that laboratory applies to a non-detected result which is essentially less than the Method Detection Limit (MDL). A non-detected result of an analyte is indicated by the Contract Required Quantitation Limit (CRQL) of that analyte suffixed with AU@.

J: This is also a concentration qualifier that laboratory applies to a positive result below the CRQL.

NOTE: The laboratory qualifiers are crossed out and replaced with the appropriate data validation qualifiers (J, R or U) by the data validator.

A.2.3.1 Data Case Description:

This case consists of 19 water samples collected at the Cornell Dubilier site September 21, 2011, for Metals and Mercury analysis according to the USEPA CLP SOW No. ISM01.2. Matrix spike, laboratory duplicate and serial dilution analyses were performed on sample MB9H34.
Field/Rinse blank-> MB9H67, MB9H71

A.2.3.2 CSF Audit: No problems.

A.2.3.3 Technical Review:

SDG MB9H34(19 Water, Metals + Hg, ICP-MS)

BLANKS
ICP-MS
The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

"U"-> Cr -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70, MB9H71
"U"-> Ni -> MB9H71
"U"-> K -> MB9H71
"U"-> Pb -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49, MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> Co -> MB9H34, MB9H37, MB9H38, MB9H43, MB9H45, MB9H47, MB9H49, MB9H51, MB9H53, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> Ba -> MB9H71
"U"-> Be -> MB9H34
"U"-> Sb -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> Cd -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H67, MB9H70
"U"-> Mg -> MB9H71
"U"-> Mn -> MB9H71

The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated at CRQLs.

"U"-> V -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H55, MB9H59

MB9H61, MB9H63, MB9H65, MB9H67, MB9H70

"U"-> Cr -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70, MB9H71
"U"-> Ni -> MB9H71
"U"-> K -> MB9H71
"U"-> Pb -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49, MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> Na -> MB9H71
"U"-> Se -> MB9H65, MB9H67
"U"-> Co -> MB9H34, MB9H37, MB9H38, MB9H43, MB9H45, MB9H47, MB9H49, MB9H51 MB9H53, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> Ba -> MB9H71
"U"-> Be -> MB9H34
"U"-> Sb -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> Ca -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H67, MB9H70
"U"-> Mg -> MB9H71
"U"-> Mn -> MB9H71
"U"-> Fe -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49, MB9H51, MB9H53, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70

The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

"U"-> Ni -> MB9H71
"U"-> Be -> MB9H34
"U"-> Sb -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70
"U"-> K -> MB9H71
"U"-> Cd -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49 MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H67, MB9H70
"U"-> Mg -> MB9H71

SERIAL DILUTION
ICP-MS

The following ICP-MS Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Non-detected analytes in samples are qualified UJ.

"J"-> As, Ni, Al, K, Mn -> MB9H34, MB9H37, MB9H38, MB9H41, MB9H43, MB9H45, MB9H47, MB9H49, MB9H51, MB9H53, MB9H55, MB9H57, MB9H59, MB9H61, MB9H63, MB9H65, MB9H67, MB9H70, MB9H71

A.2.3.4 **Contract-Problem/Non-Compliance:** None

HWSS Reviewer: _____ Date: _____
Signature

Contractor Reviewer: _____ Date: _____
Signature

Verified by: _____ Date: _____
Signature

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 41716 **SDG No.: B9H35**
LABORATORY: ChemTech **SITE: Cornell Dubilier Electronics**
ANALYSIS: BNA

DATA ASSESSMENT

The current SOP HW-35/SVOA (Revision 1) August 2007, USEPA Region II Data Validation SOP for Statement of Work SOM01.2 for evaluating organic data have been applied.

Data has been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

Tentatively Indentified Compounds (TICS) for BNA organic fraction is not validated.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: **Dorina Christina Alliu** **Date: November/2/2011**

Peer Reviewer's Signature: _____ **Date: / /2011**

Verified By: _____ **Date: / /2011**

SDG# B9H35

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No problems found for this qualification

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

The following semi-volatile samples have deuterated monitoring compound recovery below the lower limit of the criteria window. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

4-Chloroaniline-d4 B9H36, B9H39, B9H40, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H69, B9H72
3,3'-Dichlorobenzidine, 4-Chloroaniline, Hexachlorocyclopentadiene

4-Nitrophenol-d4 B9H35, B9H36, B9H39, B9H40, B9H42, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H64, B9H66, B9H69, B9H72
2,4-Dinitrophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitroaniline, 4-Nitrophenol

Phenol-d5 B9H35, B9H36, B9H39, B9H40, B9H42, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H64, B9H66, B9H69, B9H72
Benzaldehyde, Phenol

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

Not applicable

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) **Method blank contamination:**

No problems found for this qualification

B) **Field or rinse blank contamination:**

No problems found for this qualification

C) **Trip blank contamination for VOA aqueous samples**:

No problems found for this qualification

D) **Storage Blank associated with VOA samples only**:

Not Applicable

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E) **Tics "R" rejected:**

Tentatively Indentified Compounds (TICS) for BNA organic fraction is not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

No problems found for this qualification as per NFG/CCS report

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

No problems found for this qualification

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

The following analytes in the sample shown were qualified for %RSD and %D:

The following semi-volatile samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detected compounds are qualified J. Non-detected compounds are not qualified.

Pentachlorophenol B9H35, B9H36, B9H39, B9H40, B9H42, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H64, B9H66, B9H69, B9H72, SBLK14

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

No problems found for this qualification

9. COMPOUND IDENTIFICATION:

A) Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

No problems found for this qualification as per NFG/CCS report

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None

11. FIELD DOCUMENTATION:

No problems

12. OTHER PROBLEMS:

None

13. This package contains re-extractions, re-analyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified NOT to be used.

None

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 41716 **SDG No.: B9H35**
LABORATORY: ChemTech **SITE: Cornell Dubilier Electronics**
ANALYSIS: PCB

DATA ASSESSMENT

The current SOP HW-37 (Revision 1) August 2007, USEPA Region II Data Validation SOP for Statement of Work SOM01.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material), "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: **Dorina Christina Alliu** **Date: November/2/2011**

Peer Reviewer's Signature: _____ **Date: ____/___/2011**

Verified By: _____ **Date: ____/____/2011**

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No problems found for this qualification

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

No problems found for this qualification

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

No problems found for this qualification

4. Laboratory Control Samples (LCS):

The LCSs data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

No problems found for this qualification

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects U.
The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

No problems found for this qualification.

B) Field or rinse blank contamination:

No problems found for this qualification.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

For the PCB fraction, if %RSD exceeds 20% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For opening CCV, or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 15% for analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For closing CCV, if %D exceeds 50% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

The following aroclor samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

Tetrachloro-m-xylene B9H60, B9H62, B9H64, B9H66, B9H69, B9H72

7. COMPOUND IDENTIFICATION:

A) PCB Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

No problems found for this qualification.

8. CONTRACT PROBLEMS NON-COMPLIANCE: None.

9. FIELD DOCUMENTATION: No problems.

10. OTHER PROBLEMS: None

11. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified NOT to be used.

None

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 41716 **SDG No.: B9H35**
LABORATORY: ChemTech **SITE: Cornell Dubilier Electronics**
ANALYSIS: PEST

DATA ASSESSMENT

The current SOP HW-36 (Revision 1) August 2007, USEPA Region II Data Validation SOP for Statement of Work SOM01.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect) or "JN"(presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: **Dorina Christina Alliu** **Date: November/2/2011**

Peer Reviewer's Signature: _____ **Date: / /2011**

Verified By: _____ **Date: / /2011**

SDG# B9H35

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No problems found for this qualification

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

No problems found for this qualification

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

No problems found for this qualification

4. LABORATORY CONTROL RECOVERY (LCS):

The LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data.

No problems found for this qualification

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U".

The following analytes in the sample shown were qualified "U" for these reasons:

A) Method/Instrument blank contamination:

No problems found for this qualification

B) Field or rinse blank contamination:

No problems found for this qualification

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

For the PESTICIDE fraction, if %RSD exceeds 20% for all analytes except alpha-BHC and delta-BHC 25%, for the two surrogates and Toxaphene 30%, qualify all associated positive results "J" and non-detects are not qualified.

B) The Percent Difference (%D) for each of the SCP and surrogate in the PEM used for CCV must be greater than or equal to-25% and less than or equal to 25.0%. The Percent Difference (%D) between the calibration Factor (CF) for each of the SCP and surrogate in the Calibration Verification Standard (CS3) and the mean calibration factor from the initial calibration must be greater than or equal to-20% and less than or equal to 20.0%. The Percent Difference not within limits, detected associated compounds are qualified "J" and non-detected associated compounds are qualified "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

The following pesticide samples are associated with the percent resolution that did not meet the resolution criteria. Detected compounds are qualified JN. Non-detected compounds are qualified R.

Beta-BHC B9H35, B9H36, B9H39, B9H40, B9H42, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H64, B9H66, B9H69, B9H72, B9H362MS, B9H36MSD, PBLK01, PLCS01

7. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

No problems found for this qualification

8. CONTRACT PROBLEMS NON-COMPLIANCE: No problems.

9. FIELD DOCUMENTATION: No problems.

10. OTHER PROBLEMS:

None

11. This package contains re- extractions, re-analyses or dilution runs. Upon reviewing the QA results, the following Form 1(s) are identified NOT to be used.

None

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 41716 **SDG No.: B9H35**
LABORATORY: ChemTech **SITE: Cornell Dubilier Electronics**
ANALYSIS: VOA

DATA ASSESSMENT

The current SOP HW-33/VOA (Revision 1) August 2007, USEPA Region II Data Validation SOP for Statement of Work SOM01.2 for evaluating organic data has been applied.

Data has been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

Tentatively Indentified Compounds (TICS) for VOA organic fraction is not validated.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material), "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: **Dorina Christina Alliu** **Date: November/2/2011**

Peer Reviewer's Signature: _____ **Date: / /2011**

Verified By: _____ **Date: / /2011**

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No problems found for this qualification

2. DMC's

All samples are spiked with surrogate compounds (DMC's) prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

The following volatile samples have one or more DMC/SMC recovery values is less than the primary lower limit but greater than or equal to the expanded lower limit of the criteria window. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

1,1-Dichloroethene-d2 B9H54
1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene

trans-1,3-Dichloropropene-d4 B9H35, B9H36, B9H39, B9H40, B9H42, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H69, B9H72
1,1,2-Trichloroethane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

Not Applicable

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 1 times the blank contaminant level (2 times for common contaminants), the analytes are qualified as non-detects, "U".

The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

No problems found for this qualification

B) Field or rinse blank contamination:

No qualification was applied.

C) Trip blank contamination for VOA aqueous samples:

No problems found for this qualification

D) Storage Blank associated with VOA samples only:

No problems found for this qualification

E) Tics "R" rejected:

Tentatively Indentified Compounds (TICS) for VOA organic fraction is not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene.

If the mass calibration is in error, all associated data will be classified as unusable "R".

No problems found for this qualification as per NFG/CCS report

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be≥ 0.05, and ≥ 0.01 for the twenty -two analytes with poor response in both the initial and continuing calibrations. A value < 0.05, or < 0.01 for the poor performers indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

The following volatile samples are associated with an initial calibration with average relative response factors (mean RRFs) outside criteria. Detected compounds are qualified J. Non-detected compounds are qualified R.

1,4-Dioxane B9H35, B9H36, B9H39, B9H40, B9H42, B9H44, B9H46, B9H48, B9H50, B9H52, B9H54, B9H56, B9H58, B9H60, B9H62, B9H64, B9H66, B9H69, B9H72, B9H72DL, VBLK08, VBLK09, VBLK11, VHBLK01

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 20%, < 40% for the poor performers, and < 50% for 1,4-Dioxane. %D must be < 25%, < 40% for the poor performers, and < 50% for 1,4-Dioxane. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria (> 90%), non-detects data may be qualified "R".

The following analytes in the sample shown were qualified for %RSD and %D:

No problems found for this qualification.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +200%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +200%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

No problems found for this qualification.

9. COMPOUND IDENTIFICATION:

A) Volatile Fraction:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

No problems found for this qualification.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None

11. FIELD DOCUMENTATION:

No problems found for this qualification.

12. OTHER PROBLEMS:

None

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified NOT to be used.

B9H72DL

Inorganic Data Review Narrative

Case#: 41716	**Site: Cornell Dubilier**	**Soil: 0**
SDG#: MB9H35	**Lab: Sentinel Inc.**	**Water: 19**
Sampling Team:	**Reviewer: Israel Okwuonu**	**Other: 0**

A.2.1 Data Validation Flags:

The following flags may have been applied in red by the data validator and must be considered by the data user.

J - This flag indicates the result qualified as estimated

R and Red-Line - A red-line drawn through a sample result indicates unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

U - This data validation qualifier is applied to sample results ≥ MDL when associated blank is contaminated

Fully Usable Data - The results that do not carry "J" or "red-line" are fully usable.

A.2.2 Laboratory Qualifiers:

The CLP laboratory applies a contractual qualifier on all Form I=S and the QC Form when a QC analysis is outside the control limits. These qualifiers are not applied on the Lotus or XLS spreadsheets. These qualifiers and their meanings are as follows:

N: This qualifier indicates the lack of accuracy in the reported result, and is applied when matrix spiked sample recovery is outside the control limits.

E: This qualifier indicates the presence of interference, and is applied when the ICP serial dilution is outside the control limits.

***: This qualifier indicates the lack of precision, and is applied on Form I=S and Form VI when the Lab Duplicate analysis is outside the control limits.**

U: This is a concentration qualifier that laboratory applies to a non-detected result which is essentially less than the Method Detection Limit (MDL). A non-detected result of an analyte is indicated by the Contract Required Quantitation Limit (CRQL) of that analyte suffixed with AU@.

J: This is also a concentration qualifier that laboratory applies to a positive result below the CRQL.

NOTE: The laboratory qualifiers are crossed out and replaced with the appropriate data validation qualifiers (J, R or U) by the data validator.

A.2.3.1 Data Case Description:

This case consists of 19 water samples collected at the Cornell Dubilier site September 21, 2011, for Metals, Mercury and Cyanide analysis according to the USEPA CLP SOW No. ISM01.2. Matrix spike, laboratory duplicate and serial dilution analyses were performed on sample MB9H36.
Rinse blank-> MB9H72

A.2.3.2 CSF Audit: No problems.

A.2.3.3 Technical Review:

SDG MB9H35(19 Water, Metals, Hg + CN ICP-MS)

BLANKS
ICP-MS
The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

"U"-> V -> MB9H36, MB9H56, MB9H58, MB9H39, MB9H40, MB9H62, MB9H42, MB9H64 MB9H44, MB9H66, MB9H69, MB9H46, MB9H48, MB9H35, MB9H50, MB9H54
"U"-> Cr -> MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H64, MB9H44 MB9H66, MB9H46, MB9H69, MB9H48, MB9H72, MB9H35, MB9H50, MB9H52 MB9H54, MB9H36, MB9H56
"U"-> K -> MB9H72
"U"-> Pb -> MB9H56, MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H64 MB9H44, MB9H46, MB9H69, MB9H35, MB9H48, MB9H50, MB9H52, MB9H36
"U"-> Se -> MB9H56, MB9H58, MB9H39, MB9H60, MB9H62, MB9H42, MB9H64, MB9H44 MB9H66, MB9H35, MB9H48, MB9H52
"U"-> Co -> MB9H58, MB9H39, MB9H60, MB9H62, MB9H42, MB9H64, MB9H44, MB9H66 MB9H46, MB9H69, MB9H48, MB9H35, MB9H50, MB9H52, MB9H36, MB9H56
"U"-> Ba -> MB9H72
"U"-> Sb -> MB9H56, MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H64 MB9H44, MB9H66, MB9H69, MB9H46, MB9H35, MB9H48, MB9H50, MB9H52 MB9H54, MB9H36
"U"-> Cd -> MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H44, MB9H66 MB9H46, MB9H69, MB9H48, MB9H35, MB9H50, MB9H52, MB9H54, MB9H36 MB9H56
"U"-> Mg -> MB9H72
"U"-> Ag -> MB9H44, MB9H69, MB9H46, MB9H35, MB9H52, MB9H54, MB9H36, MB9H56
"U"-> Mn -> MB9H72

ICP-MS
The following samples have analyte results greater than or equal to MDLs but

less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated at CRQLs.

"U"-> V -> MB9H36, MB9H56, MB9H58, MB9H39, MB9H40, MB9H62, MB9H42, MB9H64 MB9H44, MB9H66, MB9H69, MB9H46, MB9H48, MB9H35, MB9H50, MB9H54
"U"-> Cr -> MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H64, MB9H44 MB9H66, MB9H46, MB9H69, MB9H72, MB9H35, MB9H48, MB9H50, MB9H52 MB9H54, MB9H36 MB9H56
"U"-> K -> MB9H72
"U"-> Pb -> MB9H56, MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H64 MB9H44, MB9H46, MB9H69, MB9H35, MB9H48, MB9H50, MB9H52, MB9H36
"U"-> Se -> MB9H56, MB9H58, MB9H39, MB9H60, MB9H62, MB9H42, MB9H64, MB9H44 MB9H66, MB9H48, MB9H35, MB9H52
"U"-> Co -> MB9H58, MB9H39, MB9H60, MB9H62, MB9H42, MB9H64, MB9H44, MB9H66 MB9H46, MB9H69, MB9H48, MB9H35, MB9H50, MB9H52, MB9H36, MB9H56
"U"-> Ba -> MB9H72
"U"-> Sb -> MB9H36, MB9H56, MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42 MB9H64, MB9H44, MB9H66, MB9H69, MB9H46, MB9H35, MB9H48, MB9H50 MB9H52, MB9H54
"U"-> Cd -> MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42, MB9H44, MB9H66, MB9H46, MB9H69, MB9H48, MB9H35, MB9H50, MB9H52, MB9H54, MB9H36, MB9H56
"U"-> Mg -> MB9H72
"U"-> Ag -> MB9H44, MB9H69, MB9H46, MB9H35, MB9H52, MB9H54, MB9H36, MB9H56
"U"-> Fe -> MB9H39, MB9H40, MB9H42, MB9H44
"U"-> Mn -> MB9H72

ICP-MS

The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

"U"-> Cr -> MB9H36, MB9H56, MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42 MB9H64, MB9H44, MB9H66, MB9H46, MB9H69, MB9H48, MB9H35, MB9H50 MB9H52, MB9H54
"U"-> Cd -> MB9H36, MB9H56, MB9H58, MB9H39, MB9H60, MB9H40, MB9H62, MB9H42 MB9H44, MB9H66, MB9H69, MB9H46, MB9H48, MB9H35, MB9H50, MB9H52 MB9H54
"U"-> Ag -> MB9H36, MB9H56, MB9H44, MB9H69, MB9H46, MB9H35, MB9H52, MB9H54

MATRIX SPIKE

ICP-MS

The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries less than 75%.

Detected analytes with results greater than or equal to MDLs are qualified J. Non-detected analytes are qualified UJ.

"J"-> CN -> MB9H35, MB9H36, MB9H39, MB9H40, MB9H42, MB9H44, MB9H46, MB9H48 MB9H50, MB9H52, MB9H54, MB9H56, MB9H58, MB9H60, MB9H62, MB9H64 MB9H66, MB9H69

LABORATORY DUPLICATE
ICP-MS
The following Duplicate or original sample results are less than or equal to 5xCRQL and the absolute difference between duplicate and original samples are greater than CRQL. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Non-detected analytes are qualified UJ.

"J"-> As -> MB9H35, MB9H36, MB9H39, MB9H40, MB9H42, MB9H44, MB9H46, MB9H48 MB9H50, MB9H52, MB9H54, MB9H56, MB9H58, MB9H60, MB9H62, MB9H64 MB9H66, MB9H69

SERIAL DILUTION
ICP-MS
The following ICP-MS Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Non-detected analytes in samples are qualified UJ.

"U"-> Ni, Al, K, Mn -> MB9H35, MB9H36, MB9H39, MB9H40, MB9H42, MB9H44, MB9H46 MB9H48, MB9H50, MB9H52, MB9H54, MB9H56, MB9H58, MB9H60 MB9H62, MB9H64, MB9H66, MB9H69

A.2.3.4 **Contract-Problem/Non-Compliance:** None

HWSS Reviewer: _____ Date: _____
Signature

Contractor Reviewer: _____ Date: _____
Signature

Verified by: _____ Date: _____
Signature